

## CLAIMS:

1. Igniter circuit (140) for an electronic lamp driver (100) for driving a gas discharge lamp (6), the igniter circuit comprising:
  - first and second supply input terminals (102, 103);
  - a switch branch (110) comprising a first controllable ignition switch (111) and a second controllable ignition switch (112) connected in series between said first and second supply input terminals (102, 103);
  - 5 a transformer (33) having a primary winding (41) and a secondary winding (32);
  - an igniter coil (42) connected in series with said primary transformer winding (41), this series arrangement having one end (42b) connected to a node (D) between said two controllable ignition switches (111, 112);
  - 10 a storage capacitor (44) connected between another end (41b) of said series arrangement and one of the supply input terminals (102, 103).
2. Igniter circuit according to claim 1, further comprising an igniter capacitor (36) connected in parallel to said secondary transformer winding (32).
- 15 3. Igniter circuit according to claim 1, further comprising an ignition switch controller (113) for controlling the two controllable ignition switches (111, 112).
- 20 4. Igniter circuit according to claim 1, wherein the igniter coil (42) has a first end terminal (42a) connected to a first end terminal (41a) of the primary transformer winding (41), and has a second end terminal (42b) connected to said node (D) between said two controllable ignition switches (111, 112).
- 25 5. Igniter circuit according to claim 4, wherein the storage capacitor (44) is connected between a second end terminal (41b) of the primary transformer winding (41) and one of the supply input terminals (102, 103).

6. Igniter circuit according to claim 4, wherein the storage capacitor (44) is connected between the second end terminal (41b) of the primary transformer winding (41) and the low-voltage input terminal (103).
- 5 7. Igniter circuit according to claim 1, wherein the magnetising inductivity of the transformer (33) is smaller than the inductivity of igniter coil (42).
8. Method for operating the igniter circuit (140) of claim 1, comprising the steps of:
- 10 in a first state, closing the first ignition switch (111) and opening the second ignition switch (112);  
in a second state, opening the first ignition switch (111) and closing the second ignition switch (112);  
alternating between said first and second states at a switching frequency (F).
- 15 9. Method according to claim 8, wherein the switching frequency (F) is selected to be at least approximately equal to the resonance frequency ( $F_R$ ) of the series connection of the first transformer winding (41) and the storage capacitor (44).
- 20 10. Method according to claim 9, further comprising the steps of:  
initially, selecting the switching frequency (F) to be higher than said resonance frequency ( $F_R$ );  
subsequently, lowering the switching frequency (F) until the amplitude of the voltage over the first transformer winding (41) reaches a maximum.
- 25 11. Method according to claim 9, further comprising the steps of:  
initially, selecting the switching frequency (F) to be higher than said resonance frequency ( $F_R$ );  
subsequently, lowering the switching frequency (F) until the amplitude of the voltage over the first transformer winding (41) reaches a predetermined level.

12. Method according to claim 8, wherein operating the igniter circuit (140) is continued even after ignition of a lamp (6) connected in series with the secondary transformer winding (32).

5 13. Igniter circuit according to claim 1, designed to execute the operation method according to claim 8.

14. Driver circuit (100) for driving a gas discharge lamp (6), comprising an igniter circuit (140) according to claim 1.

10

15. Driver circuit according to claim 14, having HBCF topology comprising: first and second supply input terminals (2, 3) for receiving first and second supply voltages ( $V_H$ ,  $V_L$ ), respectively;

a switch branch (10) comprising a first controllable driver switch (11) and a second

15 controllable driver switch (12) connected in series between said first and second supply input terminals (2, 3), the switch branch having a first node (A) between said two driver switches (11, 12);

a capacitor branch (20) comprising a first capacitor (21) and a second capacitor (22) connected in series between said first and second supply input terminals (2, 3), the capacitor

20 branch (20) having a second node (B) between said two capacitors (21, 22);

a lamp branch (30) comprising output terminals (4, 5) for connecting a lamp (6), the lamp branch (30) being connected between said first and second nodes (A, B);

the lamp branch (30) comprising the secondary transformer winding (32) connected in series with said lamp output terminals (4, 5).

25

16. Driver circuit according to claim 14, wherein the first and second supply input terminals (102, 103) of the igniter circuit (140) are connected to the first and second supply input terminals (2, 3) of the driver circuit, respectively.